



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 526 205 A (CANON KK) 3 February 1993 (1993-02-03) * column 27, line 41 - column 31, line 33 * * claims 31-35; figures 26-28 *	1,2,8,10	B41J2/045 B41J2/05 B41J29/393
A	US 5 519 419 A (LADONNA RICHARD V ET AL) 21 May 1996 (1996-05-21) * column 5, line 61 - column 6, line 7 * * column 6, line 41 - line 45 * * column 6, line 62 - column 7, line 45 *	1,8	
A	US 5 512 924 A (KADOWAKI HIDEJIRO ET AL) 30 April 1996 (1996-04-30) * the whole document *	1,8	
D,A	US 6 283 650 B1 (HIRABAYASHI HIROMITSU ET AL) 4 September 2001 (2001-09-04) * the whole document *	1,8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B41J
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 May 2003	Examiner Didenot, B
<div>CATEGORY OF CITED DOCUMENTS</div> <div>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</div> <div>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</div>			

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 07 8501

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0526205	A	03-02-1993	JP	3072792 B2	07-08-2000
			JP	5031919 A	09-02-1993
			JP	3253105 B2	04-02-2002
			JP	5031886 A	09-02-1993
			JP	3253107 B2	04-02-2002
			JP	5057904 A	09-03-1993
			AT	161481 T	15-01-1998
			AT	213697 T	15-03-2002
			AT	235376 T	15-04-2003
			DE	69223698 D1	05-02-1998
			DE	69223698 T2	14-05-1998
			DE	69232448 D1	04-04-2002
			DE	69232448 T2	14-08-2002
			DE	69232977 D1	30-04-2003
			EP	0526205 A2	03-02-1993
			EP	0794061 A1	10-09-1997
			EP	0941852 A2	15-09-1999
			ES	2110473 T3	16-02-1998
			US	6007174 A	28-12-1999
			US	6149264 A	21-11-2000
			US	6286926 B1	11-09-2001
			US	5477246 A	19-12-1995
US 5519419	A	21-05-1996	JP	7251512 A	03-10-1995
US 5512924	A	30-04-1996	JP	2683126 B2	26-11-1997
			JP	3175050 A	30-07-1991
US 6283650	B1	04-09-2001	JP	11157058 A	15-06-1999



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(54) Ink jet recording apparatus and method.

(57) An ink jet recording apparatus for performing recording using a recording head (C) for ejecting an ink from a plurality of ejection orifices, includes a print control unit for performing a print operation while switching a print mode between a thin multi-pass print mode for sequentially recording divided recording data in a plurality of number of times of relative scan operations of the recording head with respect to a single recording area, and a 1-pass print mode for recording all recording data in a single relative scan operation of the recording head (C), and an eject quantity control unit for controlling the eject quantity of the ink ejected from the recording head so that a total ink quantity on the recording area in the thin multi-pass print mode is larger than a total ink quantity in the 1-pass print mode.

FIG. 4

PRINT MODE	PRINT CONTROL								TARGET HEAD TEMP	
	Bk				C, M, Y				Bk	C, M, Y
	1ST SCAN	2	3	4	1	2	3	4		
1 PASS	S	-	-	-	S	-	-	-	36°C	36°C
2 PASS	C	RC	-	-	C	RC	-	-	40°C	40°C
4 PASS	C	RC	C	RC	-	-	C	RC	32°C	40°C

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-4 910 528 (G. G. FIRL ET AL)	1-3, 5-8, 12-15, 19-21, 26, 27, 29, 31, 34, 35	B41J2/505 B41J2/07
Y	* column 2, line 61 - column 4, line 29 *	22, 28, 30	
A	* column 7, line 14 - line 26 *	9	
	* column 10, line 22 - line 29; claims *		
	* column 5, line 11 - line 29 *		

Y	GB-A-2 138 190 (MONARCH MARKING SYSTEMS INC.)	22, 28, 30	
A	* page 5, line 9 - page 6, line 13 *	2, 3, 7, 8, 14, 15, 21, 29, 31	
	* page 6, line 53 - page 7, line 13 *		

A	US-A-4 860 034 (Y WATANABE)	1, 3, 7, 14	
	* column 7, line 23 - column 10, line 5 *		

A	PATENT ABSTRACTS OF JAPAN vol. 13, no. 320 (M-853) 20 July 1989 & JP-A-11 08 052 (CANON INC) 25 April 1989	2, 5, 12, 14, 16-19, 21, 23-26, 31-34	TECHNICAL FIELDS SEARCHED (Int. Cl.5) B41J
	* abstract *		

A	PATENT ABSTRACTS OF JAPAN vol. 9, no. 235 (M-415) (1958) 21 September 1985 & JP-A-60 89 379 (CANON K. K.)	1, 2, 4	
	* abstract *		

	-/--		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11 FEBRUARY 1993	Examiner FONTENAY P.H.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	PATENT ABSTRACTS OF JAPAN vol. 12, no. 045 (M-667) 10 February 1988 & JP-A-62 198 468 (NEC CORP.) * abstract *	9	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
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Place of search THE HAGUE		Date of completion of the search 11 FEBRUARY 1993	Examiner FONTENAY P.H.
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EPO FORM 1503 (03.82) (P0401)

